

# Futuristic Designs



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## Part I: Overview of Business

John Deere opened the Dubuque Works facility in 1946 and produced the first M model tractor in 1947. Through the years the manufactured products have changed from tractors to construction and forestry products. Some of the currently manufactured products include skid steer loaders, crawler dozers, crawler loaders, tracked feller bunchers and harvesters, and knuckleboom loaders. The John Deere website gives an overview of many of the products.

The production facility is one mile long and sits on a site that is about 1500 acres and manages its own water supply and treatment. There is also an office building housing engineers and business support including the R and D department in which I worked.

## Part II: Job Specifics

The R &D department develops enhancements to the construction and forestry equipment. The seek out solutions to customer issues and possible future ideas to improve the product line.

I researched and tested two possible solutions for communication issues that arise when foresters are working in locations with no cell phone coverage. Communication from the job site to the office and/or dealer is essential. Two possible solutions were given to me to test and analyze. Would the device work properly in various countries? Would it be affordable? How could the devices be implemented in the current environment.

## Part III: Introduce the Problem

My Engineering students will be given the task of designing and creating a futuristic enhancement to a piece of construction equipment. In small groups they will research current ideas and solutions about future equipment from sliding buckets to autonomous vehicles. They will be asked to design one futuristic idea, develop and test a prototype, and make a presentation to a group of John Deere engineers.

## Part IV: Background

The students will have access to internet sites that explain and demonstrate futuristic construction equipment. From my experience I will share some of the most recent ideas and enhancements that have been made to the current product lines. The student will have access to the equipment in the classroom or may bring in their own. The prototypes will be on a small scale and simplified but the process will be similar to what is done in the R & D department. The presentation will be a summary of their findings and a sales pitch for their enhancement. Communication will be a key factor as they work in groups and present their ideas.

## Part V: Business Solution

The process of creating a solution from inception to completion will be laid out for the students to follow. However, they will be given freedom to create and develop their own solutions.

## Part VI: Student Solutions

In the past my students have shown tremendous creativity so I am expecting the same this year. I can see students building moving buckets and wheels that rise and fall to the terrain. They could simulate an autonomous vehicle, however, they will not have access to the technology needed to have true autonomy. The presentation will give them the opportunity to experience sharing and selling their ideas and to inspire them to a possible future engineering vocation at John Deere. There will also be a question and answer time for the students with the engineers.